Gill, V.A.*[1], S. A. Hatch[2]; and R. B. Lanctot[2]. SENSITIVITY OF BREEDING PARAMETERS TO FOOD SUPPLY: A CONTROLLED FEEDING EXPERIMENT IN A KITTIWAKE COLONY.

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To determine what seabird reproductive parameters are most sensitive to food supply, we compared supplementally fed and natural foraging black-legged kittiwakes (*Rissa tridactyla*) breeding on an abandoned radar tower on Middleton Island, Alaska, 1996-97. Nest sites were fitted with feeding tubes and sliding, one-way glass windows that allowed easy access to adults and young. This unique experimental design allowed a suite of breeding parameters to be measured in fed and unfed pairs concurrently. The performance of supplemented pairs was significantly improved over birds limited to natural foraging conditions. Measures of breeding performance especially sensitive to food supply were fledging and hatching success, incubation shift length, adult attendance during chick rearing, and B-chick growth. Less sensitive parameters were courtship behavior, chick aggression, age of peak weight and fledging ages. This represents the first attempt to systematically rank and evaluate the importance of seabird breeding parameters as indicators of marine resources.